CLAIMS

1.   A robot controller comprising:

a motion control means (5, 5b, 5c, 5d) for performing a calculation process for achieving motion
5   control of an object (3) to be controlled;

a recognition and planning means (6, 6a, 6e, 16) for performing task and motion planning of the object to be controlled and recognition of outside world;

an input/output interface (4, 4b, 4c, 4d, 14) for
10   outputting a command to the object to be controlled and receiving as input, a state of the object to be controlled; and

a route selecting means (2, 2a, 2b, 2c, 2d, 12a, 12b) for controlling communications by switching
15   connections among the motion control means, the recognition and planning means, and the input/output interface, wherein

motions of a robot of the object to be controlled are controlled on a basis of results of the task and motion planning of the object to be controlled and the recognition
20   of the outside world while controlling communications by switching the connections among the motion control means, the recognition and planning means, and the input/output interface by the route selecting means.

2.   A robot controller comprising:

25   motion control means (5b, 5c, 5d) for performing

a calculation process for achieving motion control of an object (3) to be controlled;

recognition and planning means (6a) for performing task and motion planning of the object to be

5   controlled and recognition of outside world;

an input/output interface (4b, 4c, 4d) for outputting a command to the object to be controlled and receiving as input, a state of the object to be controlled;

a first route selecting means (2a) connected to

10   the recognition and planning means; and

a second route selecting means (2b, 2c, 2d) connected to the motion control means, the first route selecting means, and the input/output interface, wherein

motions of a robot of the object to be controlled

15   is controlled on a basis of results of the task and motion planning of the object to be controlled and the recognition of the outside world while controlling communications by switching connections between the second route selecting means and the recognition and planning means by the first

20   route selecting means and while controlling communications by switching connections between the recognition and planning means and the first route selecting means by the second route selecting means.

3.   The robot controller as claimed in claim 1 or 2,

25   wherein the route selecting means has a function to control

an order of priority of data transfer, and the route selecting means controls communications by switching the connections among the motion control means, the recognition and planning means, and the input/output interface on a

5   basis of the order of priority of data transfer.

4.   The robot controller as claimed in claim 3, wherein the route selecting means controls the order of priority of data transfer according to a control situation of the object to be controlled, and the route selecting

10 means controls communications by switching the connections among the motion control means, the recognition and planning means, and the input/output interface on a basis of the order of priority of data transfer according to the control situation of the object to be controlled.

15 5.   The robot controller as claimed in claim 3, wherein the route selecting means controls the order of priority of data transfer according to a priority order data embedded in transfer data.

6.   The robot controller as claimed in claim 3,

20 wherein the route selecting means operates to temporarily stop transfer of non-preferential data when controlling the order of priority of data transfer.

7.   The robot controller as claimed in claim 3, wherein the route selecting means operates to thin out non-

25 preferential data when controlling the order of priority of

the data transfer.

8.   The robot controller as claimed in claim 1 or 2, wherein the route selecting means has a function to control an occupation ratio of a data transfer capacity, and the route selecting means controls communications by switching the connections among the motion control means, the recognition and planning means, and the input/output interface on a basis of the occupation ratio of the data transfer capacity.

9.   The robot controller as claimed in claim 8, wherein the route selecting means controls the occupation ratio of the data transfer capacity according to the control situation of the object to be controlled, and the route selecting means controls communications by switching the connections among the motion control means, the recognition and planning means, and the input/output interface on a basis of the occupation ratio of the data transfer capacity according to the control situation of the object to be controlled.

10.   The robot controller as claimed in claim 8, wherein the route selecting means controls the occupation ratio of the data transfer capacity on a basis of occupation ratio data embedded in transfer data.

11.   The robot controller as claimed in claim 1 or 2, wherein the route selecting means has a function to control

a clock rate of data transfer, and the route selecting

means controls communications by switching the connections

among the motion control means, the recognition and

planning means, and the input/output interface by changing

5 the clock rate of the data transfer according to a control

situation of the object to be controlled.

12. The robot controller as claimed in claim 4, 9 or

11, wherein the control situation of the object to be

controlled is a control error.

10 13. The robot controller as claimed in claim 4, 9 or

11, wherein the control situation of the object to be

controlled is a control desired position.

14. The robot controller as claimed in any one of

claims 4 through 7, wherein the route selecting means has

15 an exclusive signal line for making notification of a data

transfer request.

15. The robot controller as claimed in claim 1 or 2,

wherein

the route selecting means has a storage means

20 (23) to provide time buffering between the motion control

means and the recognition and planning means, and

the route selecting means controls communications

by switching the connections among the motion control means,

the recognition and planning means, and the input/output

25 interface.

16.   The robot controller as claimed in claim 9,
wherein the route selecting means operates so as to put a
non-preferential data aside and stored in the storage means
when controlling an order of priority of data transfer.

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